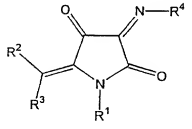
We Claim:

1. A substituted pyrrolidine-2,3,4-trione compound of formula I



I

wherein

R^1 represents H, OR^8, COR^5, CSR^5, NR^6R^7, $COOR^5$, $CONR^6R^7$, $CSNR^6R^7$, a C_{1-10}-alkyl group or an unsubstituted phenyl group,

R^2, R^3, which are identical or different, represent H, F, Cl, Br, CF_3, OR^8, SR^8, a C_{1-10}-alkyl, an aryl or a heteroaryl group or represent an aryl group bonded via a C_{1-6}-alkylene group,

R^4 represents H, OH, OR^8, SR^8, COR^5, $COOR^5$, $COCOR^5$, $CONR^6R^7$, $CSNR^6R^7$ or a C_{1-10}-alkyl group,

R^5 represents H or a C_{1-10}-alkyl group,

R^6, R^7, which are identical or different, represent H, OR^8, COR^5, $COOR^5$ or a C_{1-10}-alkyl group, and

R^8 represents a C_{1-10}-alkyl group,

in the form of their racemates, enantiomers, diastereomers or a corresponding physiologically tolerated salt.

2. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^1 represents a C_{1-6}-alkyl group.

3. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^2 or R^3 represents, or R^2 and R^3 both represent a C_{1-6}-alkyl group.

4. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^2 or R^3 represents, or R^2 and R^3 both represent an aryl group bonded via a C_{1-3}-alkylene group.

5. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^4 represents OH.

6. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^4 represents OR^8.

7. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^4 represents a C_{1-6}-alkyl group.

8. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^5 represents a C_{1-6}-alkyl group.

9. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^6, or R^7 represents, or R^6 and R^7 both represent, a C_{1-6}-alkyl group.

10. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, wherein R^8 represents a C_{1-6}-alkyl group.

11. A substituted pyrrolidine-2,3,4-trione compound according to claim 1, selected from the group consisting of:

5-(methoxyphenylmethylene)-pyrrolidine-2,3,4-trione 3-oxime;

5-(bromophenylmethylene)-pyrrolidine-2,3,4-trione 3-oxime;

5-benzylidene-pyrrolidine-2,3,4-trione 3-oxime;

5-(2-chlorobenzylidene)-pyrrolidine-2,3,4-trione 3-oxime;

5-(4-chlorobenzylidene)-pyrrolidine-2,3,4-trione 3-oxime;

5-(2,3-dichlorobenzylidene)-pyrrolidine-2,3,4-trione 3-oxime;

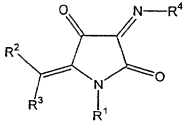
5-(2,4-dichlorobenzylidene)-pyrrolidine-2,3,4-trione 3-oxime;

5-(2,6-dichlorobenzylidene)-pyrrolidine-2,3,4-trione 3-oxime;

and

5-(3-chlorobenzylidene)-pyrrolidine-2,3,4-trione 3-oxime.

12. A method for the preparation of a substituted pyrrolidine-2,3,4-trione compound of formula I,



I

wherein

R^1 represents H, OR^8, COR^5, CSR^5, NR^6R^7, $COOR^5$, $CONR^6R^7$, $CSNR^6R^7$, a C_{1-10}-alkyl group or an unsubstituted phenyl group,

R^2, R^3, which are identical or different, represent H, F, Cl, Br, CF_3, OR^8, SR^8, a C_{1-10}-alkyl, an aryl or a heteroaryl group or represent an aryl group bonded via a C_{1-6}-alkylene group,

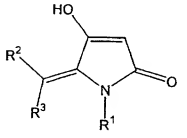
R^4 represents H,

R^5 represents H or a C_{1-10}-alkyl group,

R^6, R^7, which are identical or different, represent H, OR^8, COR^5, $COOR^5$ or a C_{1-10}-alkyl group, and

R^8 represents a C_{1-10}-alkyl group,

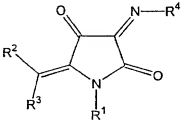
the method comprising reacting a tetramic acid of formula II



II

wherein R^1 to R^3 have the meaning according to formula I, with an aqueous solution of sodium nitrite in an ice-cooled solution.

13. A method for the preparation of a substituted pyrrolidine-2,3,4-trione compound of formula I,



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wherein

R^1 represents H, OR^8, COR^5, CSR^5, NR^6R^7, $COOR^5$, $CONR^6R^7$, $CSNR^6R^7$, a C_{1-10}-alkyl group or an unsubstituted phenyl group,

R^2, R^3, which are identical or different, represent H, F, Cl, Br, CF_3, OR^8, SR^8, a C_{1-10}-alkyl, an aryl or a heteroaryl group or represent an aryl group bonded via a C_{1-6}-alkylene group,

R^4 represents OR^8,

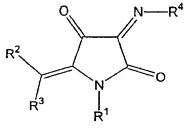
R^5 represents H or a C_{1-10}-alkyl group,

R^6, R^7, which are identical or different, represent H, OR^8, COR^5, $COOR^5$ or a C_{1-10}-alkyl group, and

R^8 represents a C_{1-10}-alkyl group,

the method comprising reacting a compound of formula I wherein R^4 represents OH, with a C_{1-10}-alkyl halide in absolute solvents at low temperatures in the presence of strong bases to give rise to a compound of formula I wherein R^4 represents OR^8.

14. A method for the preparation of a substituted pyrrolidine-2,3,4-trione compound of the formula I,



I

wherein

R^1 represents H, OR^8, COR^5, CSR^5, NR^6R^7, $COOR^5$, $CONR^6R^7$, $CSNR^6R^7$, a C_{1-10}-alkyl group or an unsubstituted phenyl group,

R^2, R^3, which are identical or different, represent H, F, Cl, Br, CF_3, OR^8, SR^8, a C_{1-10}-alkyl, an aryl or a heteroaryl group or represent an aryl group bonded via a C_{1-6}-alkylene group,

R^4 represents COR^5 or $COOR^5$,

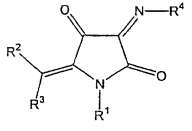
R^5 represents H or a C_{1-10}-alkyl group,

R^6, R^7, which are identical or different, represent H, OR^8, COR^5, $COOR^5$ or a C_{1-10}-alkyl group, and

R^8 represents a $C_{1\text{-}10}$-alkyl group,

the method comprising reacting a compound of formula I wherein R^4 represents OR^8, with an acid chloride of the formula R^5-(C=O)-Cl or an acid bromide of the formula R^5-(C=O)-Br or a chloroformic acid ester of the formula Cl-(C=O)-O-R^5 or a fluoroformic acid ester of the formula F-(C=O)-O-R^5, or with an open-chain carbonate of the formula R^5-O-(C=O)-O-R^5, or with a correspondingly substituted cyclic carbonate, wherein in each case R^5 represents H or a $C_{1\text{-}10}$-alkyl group,in an absolute solvent to give rise to a compound of formula I wherein R^4 represents COR^5 or $COOR^5$.

15. A method for the preparation of a substituted pyrrolidine-2,3,4-trione compound of formula I



I

wherein

R^1 represents H, OR^8, COR^5, CSR^5, NR^6R^7, $COOR^5$, $CONR^6R^7$, $CSNR^6R^7$, a $C_{1\text{-}10}$-alkyl group or an unsubstituted phenyl group,

R^2, R^3, which are identical or different, represent H, F, Cl, Br, CF_3, OR^8, SR^8, a $C_{1\text{-}10}$-alkyl, an aryl or a heteroaryl group or represent an aryl group bonded via a $C_{1\text{-}6}$-alkylene group,

R^4 represents $CONR^6R^7$ or $CSNR^6R^7$,

R^5 represents H or a $C_{1\text{-}10}$-alkyl group,

R^6, R^7, which are identical or different, represent H, OR^8, COR^5, $COOR^5$ or a C_{1-10}-alkyl group, and

R^8 represents a C_{1-10}-alkyl group,

the method comprising reacting a compound of formula I wherein R^4 represents OH with aliphatic isocyanates or isothiocyanates at low temperatures in aprotic polar solvents to give rise to a compound of formula I wherein R^4 represents $CONR^6R^7$ or $CSNR^6R^7$, and R^6 or R^7 denotes H.

16. A method according to claim 12, wherein the tetramic acid of formula II is reacted with an aqueous solution of sodium nitrite in an ice-cooled solution of glacial acetic acid.

17. A method according to claim 12, further comprising purifying the compound of formula I wherein R^4 represents OH by recrystallization.

18. A method of Claim 17, wherein the purifying is by recrystallization from ethanol.

19. A method according to claim 13, wherein the compound of formula I wherein R^4 represents OH is reacted under an inert gas atmosphere.

20. A method according to claim 13, wherein the compound of formula I wherein R^4 represents OH is reacted in open-chain or cyclic ethers, or both.

21. A method according to claim 13, wherein the compound of formula I wherein R^4 represents OH is reacted in the presence of one or more of alkali metal hydroxides, alkaline earth metal hydroxides and organometallic bases.

22. A method according to claim 13, wherein the compound of formula I wherein R^4 represents OH is reacted with C_{1-6}-alkyl halides.

23. A method according to claim 14, wherein the compound of formula I wherein R^4 represents OR^8 is reacted under an inert gas atmosphere.

24. A method according to claim 14, wherein the compound of formula I wherein R^4 represents OR^8 is reacted in open-chain or cyclic ethers, or both.

25. A method according to claim 14, wherein the cyclic carbonate employed contains 5 or 6 atoms in the ring.

26. A pharmaceutical composition comprising substituted a pyrrolidine-2,3,4-trione compound according to claim 1, or a corresponding pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

27. A method for treatment of one or more of pain, inflammatory reactions, allergic reactions, depressions, drug abuse, alcohol abuse, gastritis, diarrhoea, urinary incontinence, cardiovascular diseases, respiratory tract diseases, coughing, mental illnesses, epilepsy, schizophrenia, Alzheimer's disease, Huntington's disease, Parkinson's disease, cerebral ischaemias, cerebral infarctions, psychoses caused by increased amino acid levels, apoplexies, cerebral oedemas, hypoxia, anoxia, AIDS dementia, encephalomyelitis, Tourette's syndrome, perinatal asphyxia and anxiolysis, comprising administering to a patient in need thereof an effective amount of the pharmaceutical composition of claim 25.

28. A method according to Claim 27, wherein the method is for the treatment of one or more of pain, inflammatory reactions, allergic reactions, depressions, drug abuse, alcohol abuse, gastritis, diarrhoea, urinary incontinence, cardiovascular diseases, respiratory tract diseases, coughing, mental illnesses and epilepsy.

29. A method according to claim 27, wherein the method is for treatment or prophylaxis of schizophrenia, Alzheimer's disease, Huntington's disease, Parkinson's disease, cerebral ischaemias, cerebral infarctions, psychoses caused by increased amino acid levels, apoplexies, cerebral oedemas, hypoxia, anoxia, AIDS dementia, encephalomyelitis, Tourette's syndrome, perinatal asphyxia or for anxiolysis, comprising administering the pharmaceutical composition of claim 25 to a patient in need thereof.